

ABSTRACT OF THE INVENTION

A data processing apparatus, a computer, an article including a machine-accessible medium, and a method of processing data are disclosed. The data processing apparatus may include a pair of pipelines sharing an instruction cache, 5 data cache, and a branch predictor with the second pipeline running ahead of the first pipeline using a data value prediction module. The pipelines may be included in one or more processors and coupled to a memory to form a computer. The method includes executing a plurality of instructions using the pipeline pair, such that when a cache miss is encountered by the second pipeline during execution of a 10 LOAD instruction, the data value prediction module supplies a predicted load value in lieu of a cached value, enabling continued execution of the plurality of instructions by the second pipeline without waiting for the return of the cached value.

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